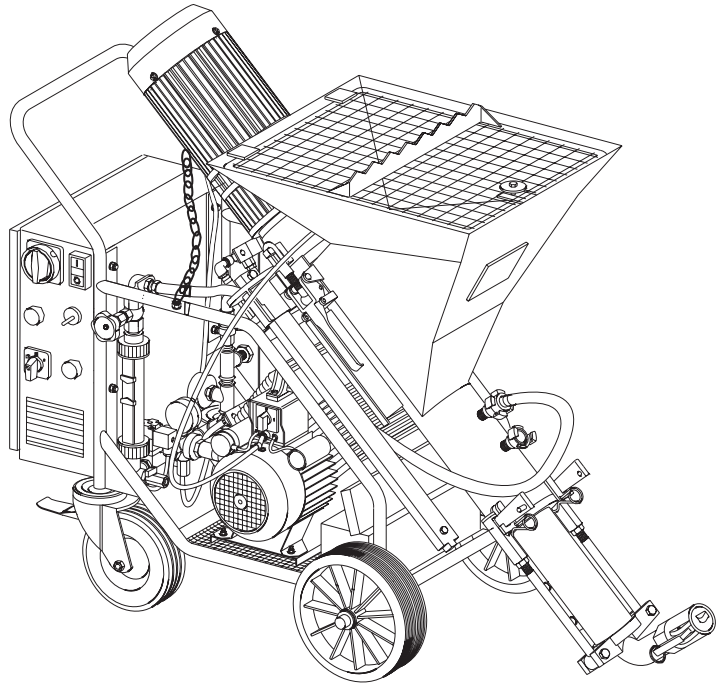
Operating Instructions

Plastering Machine
mono-mix fu



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Technical development:
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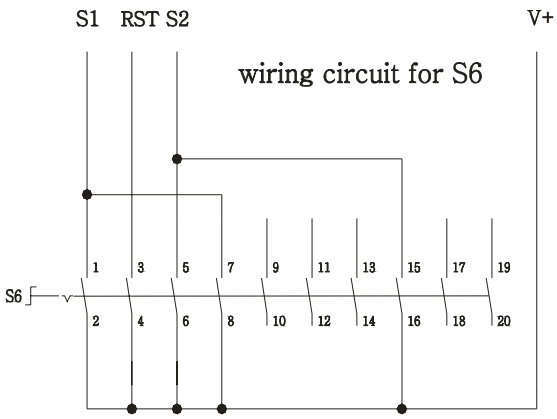
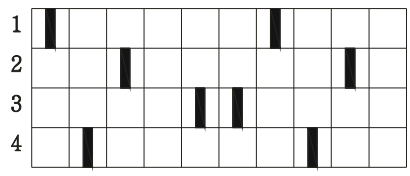


contact diagram for selector-switch

without neutral position (S6)



1. fixed frecuency
2. fixed frecuency
3. fixed frecuency
4. fixed frecuency

S1	S2	RST
1	0	0
0	1	0
1	1	0
0	0	1

Programing Code for
4 fixed frecuencies
FU - VFS7S-2022P

Fig. 25: Connection and wiring diagram for S6 (391304/001 - 04/03)

S1 = main switch
S2 = OFF button
S3 = ON button
S4 = forwards/backwards switch
S5 = solenoid valve button
S6 = speed of rotation selector switch
F1 = compressor blow-out fuse
F2 = vibrator microfuse
F3 = sec. transformer microfuse 2,5At
F4 = 16A frequency converter fuse
F5 = control unit microfuse
Q1 = water pump motor safety switch
K1 = vibrator contactor
K1A = slave relay
K2 = water pump contactor
Fu1 = frequency converter (FU)
U1 = bridge rectifier
T1 = transformer 230V/24V
PW = water pressure switch
PL = air pressure switch
H1 = operation indication lamp
H2 = fault indication lamp FU1
Y1 = water solenoid valve
C1 = vibrator condensor
P1 = Potentiometer speed of rotation

11 Circuit Diagram

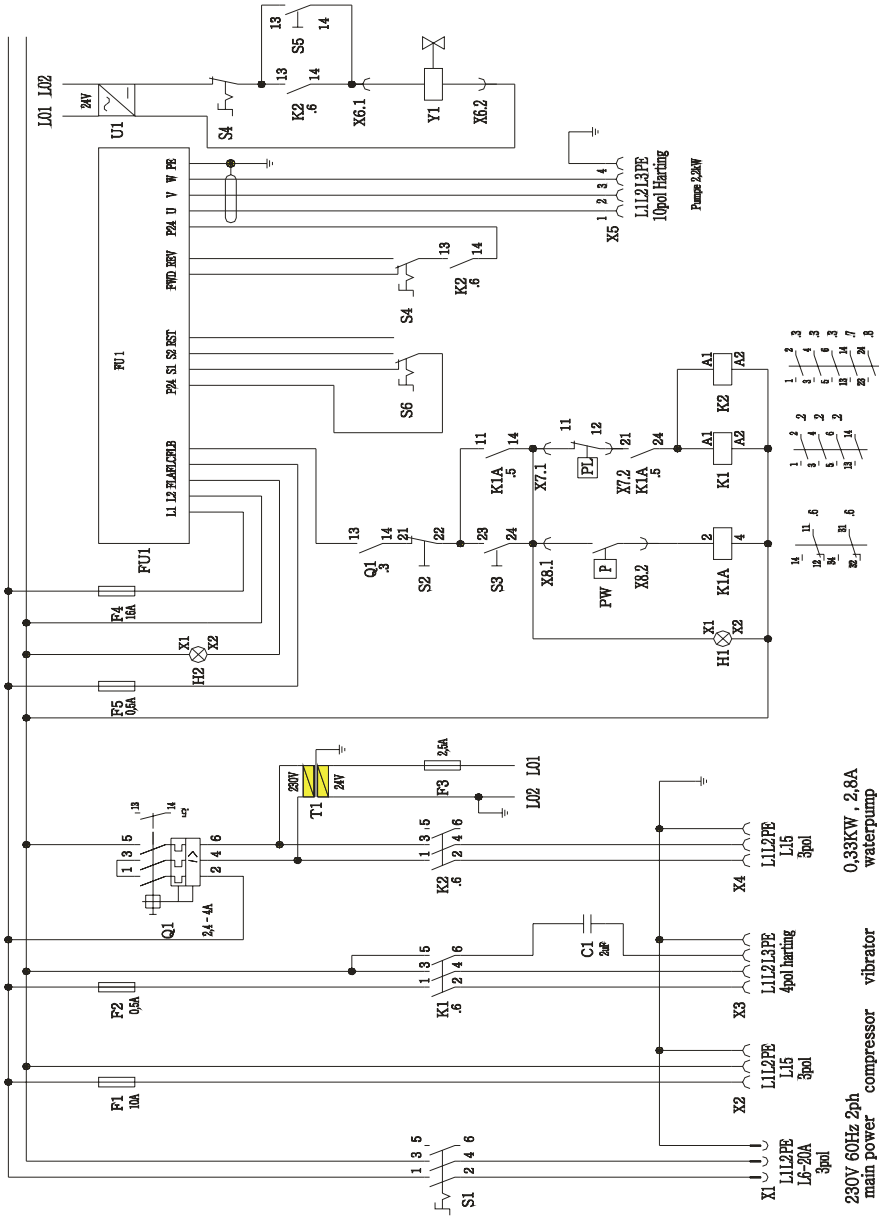


Fig. 24: Circuit diagram mono-mix fu *(391304/001 - 04/03)*

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Dear Customer,

this machine represents the most up-to-date technology and complies fully with general standards and EC guidelines. This is indicated by the CE symbol and the enclosed Declaration of Conformity in the pocket on the machine.

Before starting the machine for the first time, please remove the Declaration of Conformity from the pocket and keep it in a safe place.

Before commissioning the machine, please complete the form below. This is the easiest way to familiarize yourself with the most important machine data, and to have them ready at all times without having to refer to the rating plate on the machine. If you wish to contact us at any time, please have the information on this page ready. The data you require can be found on the machine plate.

Type _____

Machine no. _____

Year of manufacture _____

Power supply _____

Rated current (total) _____

Date of commissioning _____

Application _____

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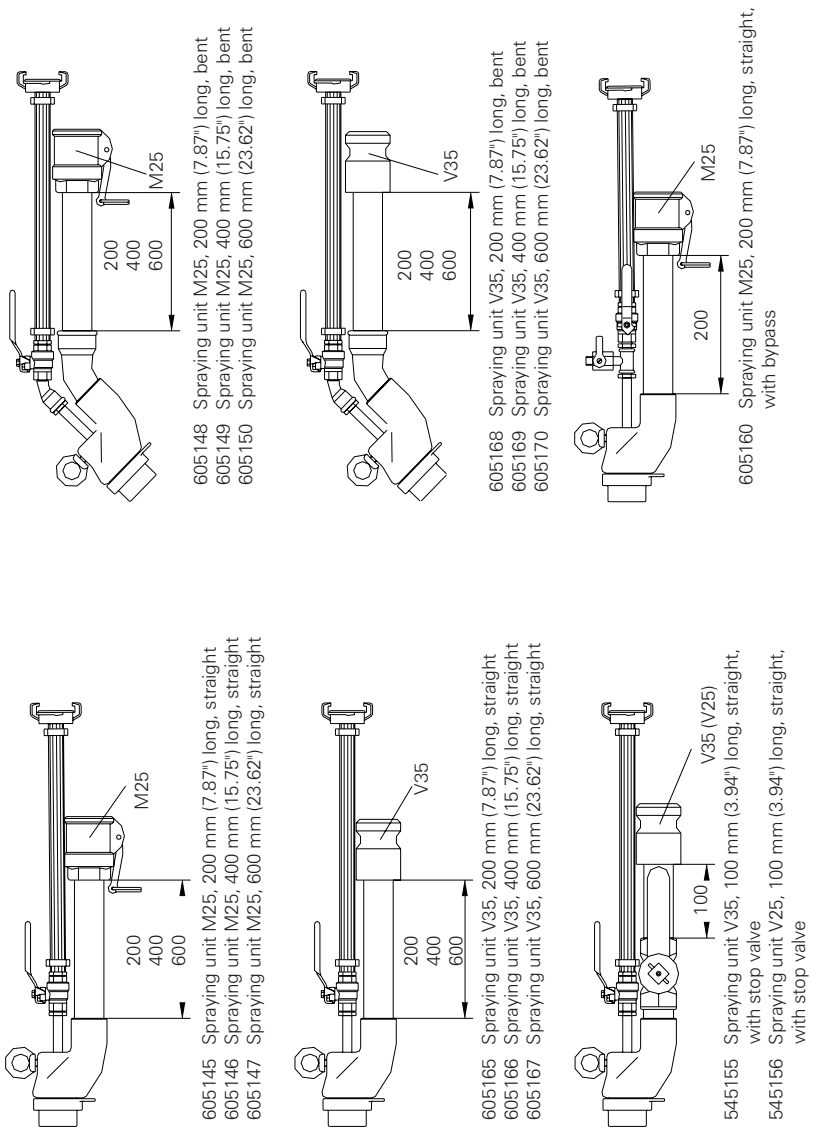
M25
200
400
600
605148 Spraying unit M25, 200 mm (7.87") long, bent
605149 Spraying unit M25, 400 mm (15.75") long, bent
605150 Spraying unit M25, 600 mm (23.62") long, bent
V35
200
400
600
605168 Spraying unit V35, 200 mm (7.87") long, bent
605169 Spraying unit V35, 400 mm (15.75") long, bent
605170 Spraying unit V35, 600 mm (23.62") long, bent
M25
200
605160 Spraying unit M25, 200 mm (7.87") long, straight, with bypass
M25
200
400
600
605145 Spraying unit M25, 200 mm (7.87") long, straight
605146 Spraying unit M25, 400 mm (15.75") long, straight
605147 Spraying unit M25, 600 mm (23.62") long, straight
V35
200
400
600
605165 Spraying unit V35, 200 mm (7.87") long, straight
605166 Spraying unit V35, 400 mm (15.75") long, straight
605167 Spraying unit V35, 600 mm (23.62") long, straight
V35 (V25)
100
545155 Spraying unit V35, 100 mm (3.94") long, straight, with stop valve
545156 Spraying unit V25, 100 mm (3.94") long, straight, with stop valve

Fig. 23: Spraying units

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10.2 Accessories

The following accessories are available for the mono-mix fu:

- Various spraying units; these are shown on page 65
- Order no. 600146 test pressure gauge for compressor, complete
- Order no. 603048 vibrator, 230 V, complete
- Order no. 601283 pressure-testing device complete with coupling M25; the pressure-testing device is coupled to the pump end piece and tests the delivery pressure of the screw pump

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1 Safety

1.1 Warning Symbols and Hazard Categories

In these Operating Instructions and according to the standards defined in ANSI Z535.1-5, the following hazard categories are used to draw attention to possible dangers which may occur when using the mono-mix fu Plastering Machine.

Depending on the seriousness of the hazard, the messages are divided into five hazard categories.

The signal words communicate the level of hazard seriousness.

DANGER

indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injuries.

CAUTION

is used without safety alert symbol to indicate a potentially hazardous situation which, if not avoided, may result in property damage.

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10 Spare Parts / Accessories

WARNING

Death or serious injury or damage to the machine itself or to other property could occur when

- using spare parts and accessories not supplied by m-tec mathis technik gmbh or when

- modifying the machine.

Use only spare parts and accessories supplied by m-tec mathis technik gmbh.

The manufacturer will assume no liability for any accidents or damage caused by the use of spare parts and accessories of other types or unauthorized modification or conversion of the machine.

Please send orders for spare parts to
m-tec mathis technik gmbh, Sales Dept.:
Tel. Nr.: +49 / 7631 / 709-112 or -216
Telefax: +49 / 7631 / 709-116

10.1 Spare Parts

- Spur-wheel back-geared motor (3.0 kW)
- Motor coupling, motor rocker
- Safety grid
- Pump mixing pipe with material trough mixer shaft, pump flange
- Screw pump, rotor, stator
- Pump end piece M35
- Cleaning device
- Switch cabinet 230 V complete

For further spare parts, refer to our spare-parts catalogue.

9.3 Faults in Frequency Inverter

When faults occur in the frequency inverter, the red alarm light on the switch cabinet lights up. The machine does not start.

Error	Remedy
Overload protection triggers (consistency too thick; to many hoses laid out)	Set consistency, fewer hoses
Machine switched on and off with main switch	Set double push button "On/Off" to "Off" main switch to "0"; then leave machine switched off for at least 1 minute To avoid this type of fault, switch the machine on and off remotely or at double push button "On/Off", never at the main switch
Frequency inverter overheated, cooler defect	Replace or repair cooler on frequency inverter

With alarm signals of any kind, the machine must be switched off at the double push button "On/Off" and then the main switch set to "0".
After correcting the fault, wait for at least 1 minute before the frequency inverter is ready for operation before switching the machine on again.

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NOTICE / ATTENTION

is used without safety alert symbol to indicate a potential situation which, if not avoided, may result in an undesirable event or state.

The signal word is accompanied by a pictogram which can be of different shape to emphasize the kind of hazard. It is followed by a statement of the hazard, the probable consequence of involvement with the hazard and how the hazard can be avoided.

Further symbols and signal words used in these Operating Instructions:

FI CIRCUIT BREAKER

This symbol points out that only FI circuit breakers with the symbol shown opposite should be used.

ENVIRONMENTAL HAZARD

This symbol points out that environmental regulations must be observed.

INFORMATION / NOTE

This symbol draws your attention to important or additional information relevant to the machine or documentation.

EYE PROTECTION

This symbol points out that safety goggles must be worn.

The frame of the goggles must comply with the standard DIN 58211 (part 2) and the safety lenses with DIN 4647 (sheet 5).

1.2 General Safety Instructions

DANGER

Follow these safety instructions carefully. Failure to do so may result in increase of risk of accident or injury. These safety instructions must always be adhered to when transporting, assembling, operating, maintaining or disassembling this machine. These safety instructions apply to the instructions throughout this manual, and must be applied to all facets of the machine's use, including, but not limited to, transport, assembly, operation, maintenance or disassembly.

The mono-mix fu Plastering Machine has a state-of-the-art design, it is reliable in operation and it has left the factory in perfect condition. Nevertheless, it can pose a danger if it has been installed improperly or contrary to directions (see chapter 3), or it is operated by untrained personnel.

In order to protect the machine from damage and enable personnel to operate it properly and safely every operator must observe the following instructions before starting up the machine:

- ***Read and understand the Operation and Service Manual and familiarize with how the machine is operated. The chapter on "Safety" is particularly important.***
- ***Observe the pertinent accident prevention regulations as well as other generally recognized rules and regulations pertaining to industrial safety and medical care.***
- ***Ensure that any difficulties are resolved before starting up the machine (see manufacturer's address on the back of the cover).***

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Error	Cause	Remedy
Motor-protection switch on compressor triggers	Intake filter clogged, compressor heats up	Clean intake filter or replace it
Hose-pressure gauge indicates high pressure	Mortar hose kinked or blocked	Lay mortar hose as straight as possible; remove blockage
	Material too thick	Set consistency thinner
	Hose too long	Shorten mortar hose
	Air nozzle clogged	Remove air nozzle on spray unit and clean
Machine switches off during spraying	Safety valve on compressor does not close	Release safety valve
Machine cannot be switched on remotely	Safety valve on compressor set too low	Set valve to 3.2 - 3.5 bar (46.4 - 50.75 psi)
	Air-pressure monitor set too high	Set air-pressure monitor to 1.8 bar (26.1 psi) switch-off pressure
	Compressor generates too little air	Check air filter, check membrane and valve plate and replace if necessary.

9.2 Faults/Errors during Operation

Error	Cause	Remedy
Motor does not start	Screw pump stuck	Using selector switch "forward/ reverse", allow the pump to run back and forward for a short time
	Frequency-inverter fault	(see page 66)
Mortar too thick	Too little water	Check water infeed, Open fine-control valve further
Mortar too thin	Too much water	Close fine-control valve further
Uneven mortar consistency	Water filter in press. reducer or inlet clogged	Clean water filters
	Material accumulation on mixing shaft or pipe	Clean dirty parts
	Mixing shaft worn	Replace mixing shaft
	Pump end piece dirty	Clean pump end piece
	Rotor and stator worn	Replace rotor and stator
Impossible to set correct water quantity	Filter in pressure reducer blocked	Remove and clean filter
	Pressure reducer set to low	Set pressure reducer to 2 bars (29 psi) switch-off pressure
	Water inlet on mixing pipe blocked	Remove water hose with GEKA coupling and clean inlet pipe
	Water-inlet filter clogged	Remove and clean filter
Machine switches off	Water supply fault	Check water supply and restore
Motor-protection switch triggers (Press switch in before repairing fault)	Material too thick	Set material consistency thinner
	Screw pump too tight	Loosen screw pump slightly
	Screw pump stuck	Allow pump to run back and forward once or twice, replace if necessary;
	Pump end piece clogged	Clean pump end piece

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The Operation and Service Manual must always be kept in the specially designed pocket on the machine, so that it will be accessible to all machine operators at all times. All personnel operating or servicing the machine must be told where to find this Manual.

Modifications of the machine are not permitted. All replacement parts, accessories and lubricants must be furnished by m-tec mathis technik gmbh. The use of unauthorized parts, accessories or lubricants may result in death or serious injury, may cause damage to the machine and will nullify all liability on the part of the manufacturer for resultant damage.

Wear proper personal protective equipment, including, but not limited to, eye and hearing protection at all times while operating machinery. Keep hands, feet, hair and clothing away from all moving parts of the motor to prevent risk of serious injury. Avoid wearing loose-fitting clothing or jewelry when near the motor, and secure long hair in order to keep it away from moving parts.

This machine must be operated in compliance with all applicable federal, state and local laws, regulations, and ordinances at all times. This includes, but is not limited to, the requirements of TITLE 29 of the CODE OF FEDERAL REGULATIONS, PART 1926 (29 CFR 1926). Failure to operate this machinery in compliance with all applicable laws, regulations, and ordinances may result in death or serious injury.

The proper use of this machinery requires that the operator be in full control of the machinery at all times. None of this equipment must be used by an operator that is under the influence of alcohol or drugs, including prescription drugs that may impair an operator's ability to safely operate this equipment. Failure to adhere to this requirement may result in death or serious injury.

1.3 Intended Use

The correct use of the mono-mix fu consists in mixing and pumping of previously-mixed dry material with a maximum grain size of 3 mm (0.118") such as mortar or ready-mixed lime-gypsum plasters.

DANGER

Use of the machine for any other purpose than that described above, may result in bodily or even fatal injury, damage to the machine itself or to other property.

It may also impair the efficient functioning of the machine.

Use of the machine for any other purpose than that described above is prohibited!

1.4 Target Group

This document is intended for personnel carrying out start–up, operation and maintenance of the machine. Such personnel must be qualified according to specifications stated in chapter 1.5.

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9 Troubleshooting

WARNING

To prevent death or serious injury, damage to the machine itself or to other property, always comply with the safety notes in each section of these Operating Instructions!

This table is not intended to replace the detailed instructions in the appropriate sections.

9.1 Faults/Errors at Start-up

Error	Cause	Remedy
Machine cannot be switched on	no mains voltage	Check power connection and plug in if necessary
		Check fuses in site power distributor
	no water pressure	Check water infeed hoses/pipes
		Check water-infeed filter
		Solenoid valve on water fitting defective and does not open: replace
	Water-inlet pressure too low	Increase pressure of water feed (min. 2 bar (29 psi)); if necessary use pressure-increasing pump
	Water-pressure monitor wrongly set	Check water press. monitor: Switch-on pressure 2.5 bar (36.3 psi); Switch-off pressure 2.0 bar (29 psi) Use pressure-increasing pump if necessary
	The 4-pole flange socket in cabinet is not assigned	Plug control cable for air-pressure monitor of spraying unit or fine-plaster spraying unit into 4-pole flange socket

8.3 Lubricant Change

ATTENTION

Gear and motor may overheat if overfilled with lubricant.

Always respect filling levels and do not mix different types of oil and grease.

Non-compliance with lubricating instructions will invalidate the guarantee.

ENVIRONMENTAL HAZARD

Always observe environmental regulations when disposing of oil, grease or cleaning agents.

The gear motors are ready for operation on delivery and are maintenance-free up to 8000 hours of operation.

ATTENTION

After every 8000 hours of operation, the gears must be cleaned using a suitable flushing oil and then checked.

After cleaning, refill with fresh lubricant of a suitable type.

As grease charge for the motor, we recommend fluid grease of type Esso S420, quantity 420 cc.

If the recommended type of grease is not available, the following types may also be used:

Aral	FDP 00
BP	Energrease HTO
Esso	Fibrax EP-370
Mobil	Mobilplex 44
Shell	Special Gear Grease H

1.5 Qualified Personnel

DANGER

Start–up, operation and maintenance of the machine carried out by unqualified personnel, may result in bodily or even fatal injury, damage to the machine itself or to other property.

Start–up, operation and maintenance of the machine may only be carried out by qualified personnel.

It is the duty of the operator to ensure that operating staff has read and understood the operating manuel, in particular the chapter "Safety", and that it is sufficiently qualified for operating the machine.

Qualified persons are those who, through training or experience, have sufficient knowledge in the field of mortar-feeding and mortar-spraying machines and who are sufficiently familiar with legislation regarding safety, accident prevention, guidelines and general technical procedures to allow them to assess the safe condition of such machines.

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1.6 Safety at Work

DANGER

When disregarding safety regulations, secure operating conditions are not guaranteed.

When transporting, assembling, dismantling, operating, cleaning, and servicing the machine, the applicable national and international safety regulations and legislation must always be observed, even if such regulations and legislation are not explicitly mentioned in these instructions.

DANGER

Nonobservance of the following safety instructions and notes will result in damage to the machine or equipment or even in death or serious injury

Always observe the following safety instructions!

- The machine must be used only for its intended purpose (see "Intended Use", page 10)!
- Before every shift, the machine must be carefully inspected by the foreman for obvious signs of damage, in particular to electric cables, plugs, couplings, mortar hose and air hose.
- If necessary, the safety of the machines must be verified by a person qualified to make such inspections. The inspection must however be carried out at least once per year.
- The machine must not be lifted by crane or other lifting gear, but transported manually. It can be dismantled into its various components for this purpose (see “Dismantling into Components”, page 58).

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8.2 Cleaning Water Filters

The water filters in the water fitting must be cleaned every 4–6 weeks.

- Open pressure reducer with special key and remove filter
- Open water inlet with special key and remove filter
- Clean filters well – if possible with compressed air
- Replace filters and secure with special key

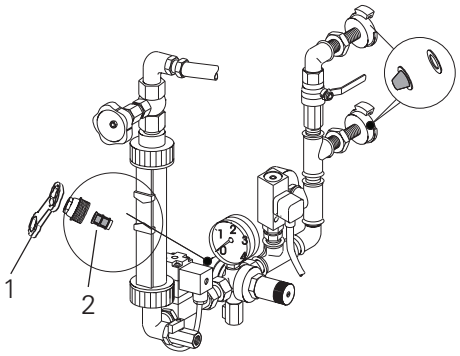

Fig. 22: Removal of water filters

1 Special key
2 Water filter

8 Maintenance

WARNING

Danger of electrocution as certain components remain live even when the machine is switched off.

Before working on electrical components, always pull out the power plug.

WARNING

Nonobservance of the maintenance and lubrication instructions could result in damage to the machine or equipment or even in death or serious injury.

Always observe the maintenance and lubrication instructions!

m-tec mathis technik gmbh will assume no liability for damage caused by disregarding the maintenance and lubrication instructions.

8.1 General Care and Maintenance Work

- Before every shift, check the machine for signs of obvious damage, in particular to hose and cable connections
- Clean material residues off mixing pipe, material trough and mixing shaft
- Clean compressor air filter

Before dismantling the machine, the following operations must be carried out:
- the machine must be run until it is empty (see “Finishing work”, page 55);
- the mortar hoses must be de-pressurized according to instructions and uncoupled (see “Finishing work”, page 55);
- the machine must be switched off at the push button “On/Off” and the main switch set to “0”;
- all electric cables, water and air hoses must be removed.

- The machine must be positioned in an area where no objects can fall onto it. If this is not possible, the machine and the area around it must be protected by a roof.
- The machine must be positioned firmly on a level surface. It must be secured to prevent it from tilting or moving.
- The work area at the switch cabinet and the area around the pump unit must be easily accessible.
- The machine must be connected to a regulation site distributor box with FI automatic circuit breaker. Before use, the function of the FI circuit breaker must be tested while the machine is running, as the frequency inverter may cause the circuit breaker to malfunction.

FI CIRCUIT BREAKER

Only FI circuit breakers with the symbol shown opposite should be used. Required fuse: 20 A (min.)

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- Ensure that the safety grid is mounted securely on the material trough. Do not put your hands into the material trough. Do not place objects in the material trough.
- We recommend installing a hose-pressure gauge. This allows the pressure in the mortar hoses to be monitored at all times, increases the safety of the operating personnel and ensures economical operation. A hose-pressure gauge is not supplied with the mono-mix fu.
- For safety reasons, use only mortar hoses with a permitted operating overpressure of 40 bars (580.2 psi) and a bursting pressure of at least 120 bars (1740.5 psi).
- During operation, the pressure of 20 bars (290.1 psi) must not be exceeded (monitor pressure on hose-pressure gauge).
- If blockages occur, the machine must be switched off immediately at the double push button “On/Off”.
- Always de-pressurize mortar hoses before uncoupling them.
  Check the pressure on the hose-pressure gauge before opening them. Cover the coupling with a tarpaulin. Wear regulation goggles and do not face the coupling directly, as material may be ejected forcefully.
- If the machine is switched off by means of the spraying unit (close air valve) or the fine-plaster spraying unit (close stop valve), it is still on standby and can be switched on by triggering the spraying unit or the fine-plaster spraying unit. This is signalized by a white lamp lighting up on the double push button “On/Off”.

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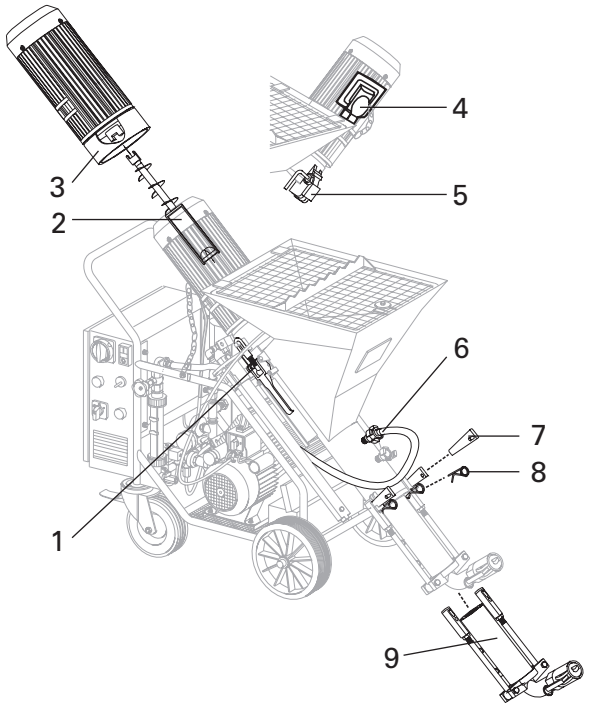

Fig. 21: Dismantling into components

1 Eccentric lock of motor
2 Mixing shaft
3 Motor
4 Motor plug
5 Bolt on motor rocker, secured with cotter pin
6 Interior water feed
7 Clamping wedge, both sides
8 Cotter pin on clamping wedge, both sides
9 Screw pump consisting of rotor and stator

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- Switch machine off at double push button “On/Off” and set main switch to “0”.
- Rinse the pump-end piece with spray nozzle.

7.3 Dismantling into Components

WARNING

To prevent electrical shock or projection of hose couplings or mortar the following operations must be carried out before dismantling the machine:

- it must be run until empty (see “Finishing work”, p. 55);

- the mortar hoses must be fully de-pressurized according to instruction and then uncoupled (see “Finishing work”, p. 55);

- the machine must be switched off at double push button “On/Off” and the main switch set to “0”;

- all electric cables, water and air hoses must be removed.

Remove pump end piece with screw pump:
- Remove securing pin of clamping wedges
- Release clamping wedges
- Remove pump end piece and screw pump

Remove motor and motor rocker from mixing pipe:
- Release eccentric lock
- Remove cotter pin on securing bolt and pull bolt out
- Remove motor and rocker
- Pull mixing shaft out of the mixing pipe

Remove material trough with mixing part:
- Release wedge
- Pull the material trough forward and out

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INFORMATION

For the sake of simplicity, the following sentence is used in these instructions to refer to the above-mentioned safety note:

If the machine is switched to “standby” it is still ready for operation and can be started remotely at any time. Indication: the white lamp on the “On/Off” button lights up.

- Never point the spraying unit or the fine-plaster spraying unit at persons!
- The Troubleshooting Table is not intended to replace the detailed instructions in the appropriate sections of these Operating Instructions. Always comply with the safety notes in each section!
- Before working on electrical components, always pull out the power plug, as certain components remain live even when the machine is switched off.
- Use only spare parts and accessories supplied by m-tec mathis technik gmbh. If spare parts and accessories of other types are used, m-tec mathis technik gmbh will assume no liability for damage caused.
- Modifications to the machine are prohibited. The manufacturer will assume no liability for damage caused by unauthorized modification or conversion of the machine.
- To avoid unnecessary loading of the machine and premature wear to the spiral pump, do not lay out more mortar hoses than are actually required.

- For operation, the direction of rotation of the motor must be set to “1=forward”.
- The machine must only be switched on and off at the double push button “On/Off”, or using the spraying unit or fine-plaster spraying unit. Never use the main switch. If the machine is switched off repeatedly at the main switch, the frequency converter may malfunction.
- Do not use the material until the adequate consistency has been reached. Catch any material emerging beforehand in a bucket and dispose of it correctly.
- During intervals in work, remember the time required for the material to set. The material sets more rapidly at high temperatures. If the interval in work is longer than 30 minutes, the machine and the mortar hoses must be emptied beforehand (see “Finishing work”).
- Below freezing temperature, water fittings may be damaged if allowed to freeze.
- If the machine is being run until empty, do not use the watery material in the machine.
- Mortar residues removed during cleaning must be properly disposed of in a regulation waste-rubble container.
- Overfilling the gear unit and motor with lubricant may cause overheating. Do not mix different types of oil and grease.

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7.2 Cleaning the Pump Mixing Pipe

- Pull out the motor plug (fig. 21, 4)

WARNING

Moving parts can crush and cut.

Before working on the pump, pull out the motor plug.

- Release the eccentric lock (fig. 21, 1) of the motor
- Fold the motor (fig. 21, 3) down
- Pull the mixer shaft (fig. 21, 2) out of the mixing pipe and material trough
- Clean the mixer shaft thoroughly
- Insert cleaning device into the mixing pipe
- Fold motor up again and secure with eccentric lock
- Re-insert motor plug and switch machine on at double push button “On/Off”
- Allow the machine to run until the cleaning device has moved to the bottom
- Switch machine off at double push button “On/Off” and pull out motor plug

WARNING

Danger of electrocution as certain components remain live even when the machine is switched off.

Before working on electrical components, pull out the motor plug.

- Release the eccentric lock of the motor and fold it down
- Remove the cleaning device
- Re-install the clean mixing shaft
- Fold motor up again and secure with eccentric lock
- Re-insert the motor plug and switch machine on at double push button “On/Off”
- Allow the machine to run briefly to ensure that the screw pump is properly flushed

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7 Cleaning

ENVIRONMENTAL HAZARD

Mortar residues removed during cleaning must be properly disposed of in a regulation waste-rubble container.

7.1 Cleaning Mortar Hoses

- Insert a foam-rubber ball of the correct diameter into the mortar hose and couple it to the cleaning valve of the water fitting with the reducing adapter M35/GEKA.
- Open the cleaning valve until the rubber ball emerges at the other end of the hose
- Repeat the process until clean water emerges from the hose.

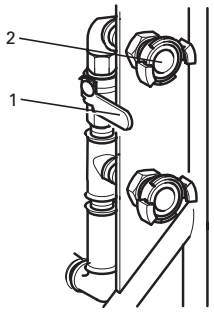

Fig. 20: Water fitting

1 Opening lever of cleaning valve
2 Cleaning valve

- Always observe environmental regulations when disposing of oil, grease or cleaning agents.
- After every 8000 hours of operation, the gears must be cleaned using a suitable flushing oil and then checked. After cleaning, refill with fresh lubricant of a suitable type.
  m-tec mathis technik gmbh will assume no liability for damage caused by disregarding the maintenance and lubrication instructions.

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1.7 Personal Safety Equipment

WARNING

Nonobservance of the following safety instructions could result in serious injury.

Always observe the following safety instructions!

- The proprietor/operator of the machine must supply personal noise-protection equipment for personnel using the machine if the noise level at the place of work exceeds 85 dB (A).
- If the noise level at the place of work exceeds 90 dB (A), the use of this equipment by personnel is compulsory.
- Always wear safety goggles when removing blockages and during spraying work.
- The frame of the goggles must comply with the standard DIN 58211 (part 2) and the safety lenses with DIN 4647 (sheet 5).
- During spraying work, always wear a safety helmet and safety shoes or boots.

6.9 Finishing Work

- Allow the machine to run until the mortar trough and hoses are empty

ATTENTION

To avoid overload of the machine do not use mortar which is too thin.

- Switch machine off at double push button “On/Off”
- Set reverse switch “Motor forwards/reverse” to position “2 = reverse”
- Switch the machine on at the double push button “On/Off” and allow it to run until the pressure in the mortar hoses is zero

WARNING

Hose couplings or material could be projected forcefully when opening hose couplings.

Make sure that mortar and hoses are fully depressurized before uncoupling them.

Before opening the couplings:

- wear regulation goggles,

- check pressure on hose-pressure gauge and cover couplings with a tarpaulin.

Do not face the coupling directly when opening it.

- Switch machine off at double push button “On/Off” and switch main switch to “0”
- Switch compressor off if necessary
- Clean the machine (see page 56).

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6.8 Winter Operation

ATTENTION

Water fittings may be damaged if allowed to freeze.

For longer intervals in work, in particular below freezing temperature, completely empty the water fittings after cleaning.

- Switch off water supply
- Remove and empty feeder hose
- Uncouple water hose between water fitting and mixer pipe
- Open draining valves of water fitting (fig. 19)
- Close draining valve before starting machine up again

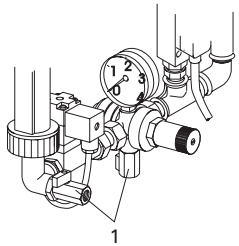

Fig. 19: Drainage of valves

1 Draining valves on water fitting

2 Description of the Machine

2.1 Method of Function

The mixer and pump components of the mono-mix fu are both powered by the same electric motor. The material is mixed to the adequate consistency in the mixer section and then pumped out by an eccentric pump.

The machine is fitted with a frequency converter which permits continuous adjustment of the motor speed.

The mono-mix fu can be controlled directly from the switch cabinet.
If a spraying unit is being used, the machine can be switched on or to “standby” using the air valve.
If a fine-plaster spraying unit is being used, the machine can be switched on or to “standby” by means of the trigger.

WARNING

Never point the spraying unit at another person!

The machine is still ready for operation if switched to "standby" and can be started remotely and accidentally at any time causing serious injury.

The white lamp on the “On/Off” button lights up in standby mode.

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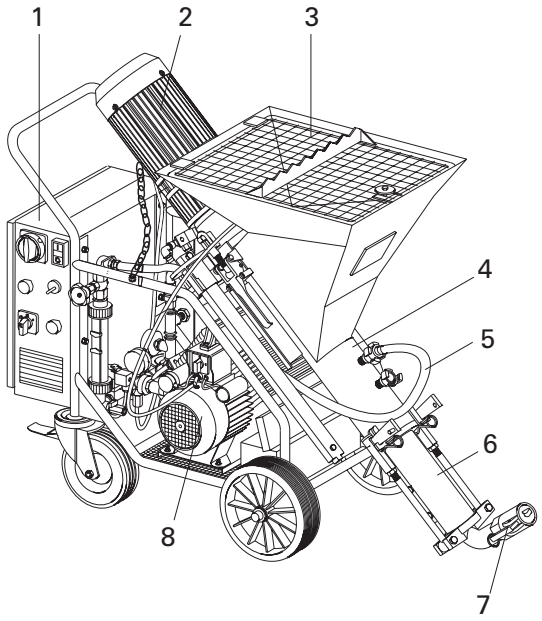

Fig. 1: Mono-mix fu, general view from right-hand side

1 Switch cabinet (see p. 21)
2 Motor or mixer and pump
3 Material trough with safety grid
4 Pump mixing pipe
5 Machine interior water connection
6 Spiral pump
7 Pump end piece
8 Compressor

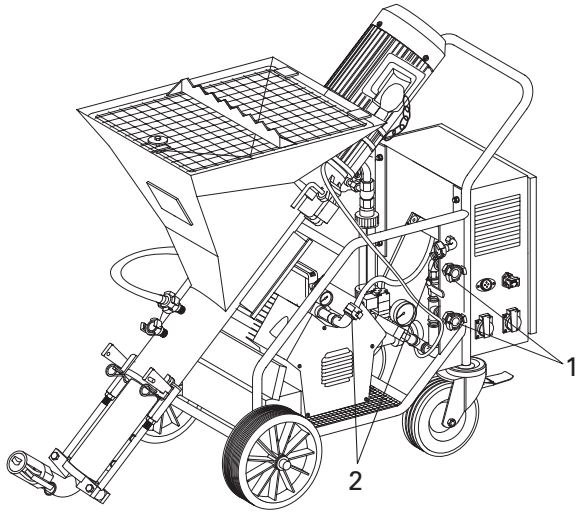

Fig. 2: Mono-mix fu, general view from left-hand side

1 Water connections (see page 28)
2 Air connections (see page 27)

6.7 Intervals in Work

ATTENTION

Material may set inside the machine and hoses.

During intervals in work, remember the time required for the material to set. It sets more rapidly at high temperatures.

If the interval in work is longer than 30 minutes, the machine and the mortar hoses must be emptied beforehand (see "Finishing work").

- For intervals in work of more than 10 minutes, switch the machine off at the double push button "On/Off" and switch main switch to "0"!

Intervals in pump operation of less than 10 minutes:

- Switch the machine off at the double push button "On/Off"

Intervals of less than 10 minutes when using spraying unit:

- Close air valve on spraying unit; the machine goes into "standby mode"

Intervals of less than 10 minutes when using fine-plaster spraying unit:

- First close the stop valve to the beginning of the red zone marked on the lever
- Close the stop valve entirely when pressure has dropped to zero in the mortar hoses (check hose pressure gauge).

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6.6 Removal of Blockages

WARNING

Hoses could explode or material be projected if blockages occur.

The machine must be switched off immediately at the double push button "On/Off".

- Set reverse switch "Motor forwards/reverse" to position 2 = reverse
- Switch the machine on at the double push button "On/Off" and allow it to run until the pressure in the mortar hoses is zero.

WARNING

Hose couplings or material could be projected forcefully when opening hose couplings.

Make sure that mortar and hoses are fully depressurized before uncoupling them.

Before opening the couplings:

- wear regulation goggles,

- check pressure on hose-pressure gauge and cover couplings with a tarpaulin.

Do not face the coupling directly when opening it.

- Switch machine off at double push button "On/Off"
- Clean the mortar hoses (see "Cleaning mortar hoses", page 56)
- Re-connect the mortar hoses securely
- Set reversing switch "Motor forward/reverse" to position "1 = forward"
- Switch machine on at double push button "On/Off"

2.2 Switch Cabinet

The electrical fittings comply with VDE regulations.

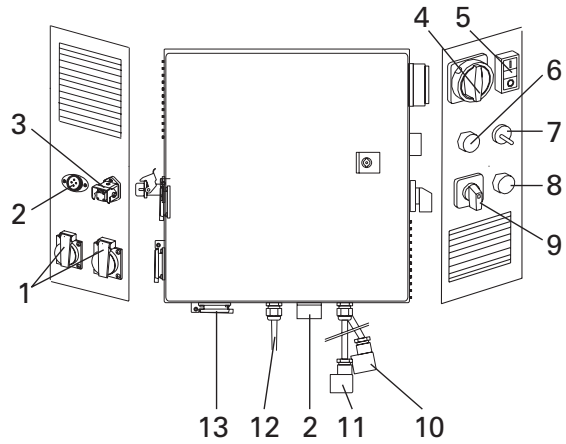

Fig. 3: Switch cabinet

1 Safety socket 250 V for connection of compressor or optional water pump
2 4-pole socket for control cable of pressure monitor "Air" or fine-plaster spraying unit
3 4-pole cube plug for connection of a vibrator
4 Main switch
5 Double push button "On-Off"
6 Push button "Water infeed"
7 Pole-changing switch "motor forward/reverse"
8 Signal lamp "Fault frequency inverter"
9 4-stage switch "motor speed"
10 Connection for pressure monitor "water"
11 Connection for solenoid valve
12 Power cable "motor"
13 Input socket 250 V, L6-20A 3-pole

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2.3 Operating Elements on Switch Cabinet

Main Switch (Fig. 3, 4)
In position “0” the machine is disconnected; in position “1” it is ready for operation.

ATTENTION

Never use the main switch to switch the machine on and off.

The frequency converter may malfunction when switching the machine off repeatedly using the main switch.

The machine must only be switched on and off at the double push button “On/Off”, or using the spraying unit or fine-plaster spraying unit.

Double Push Button “On/Off” (Fig. 3, 5)
The machine can be switched on and off with the double push button “On/Off”. Indication: when the machine is switched on and ready for use, the white signal lamp on the double push button “On/Off” lights up.

WARNING

Never point the spraying unit at another person!

The machine is still on standby when switched off by means of the spraying unit (air valve) or the fine-plaster spraying unit (stop valve).

It can be switched on accidentally by triggering the spraying unit or the fine-plaster spraying unit.

The white lamp on the “On/Off” button lights up in standby mode.

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6.5 Spraying with the Fine-Plaster Spraying Unit

WARNING

Never point the spraying unit at another person!

The machine is still ready for operation if switched to "standby" and can be started remotely and accidentally at any time causing serious injury.

The white lamp on the double “On/Off” button lights up in standby mode.

- Ensure that the compressor is switched on: set selector switch to “1” (fig. 17, 1)
- Ensure that the control cable of the fine-plaster spraying unit is plugged in to the switch cabinet (fig. 18, 1)
- Ensure that the air valve on the fine-plaster spraying unit is closed
- Set main switch to “1”
- Switch machine on at double push button “On/Off”

The machine is now ready for operation, i.e. in stand-by mode. However, it only starts when the stop valve on the fine-plaster spraying unit is opened.
When the stop valve on the fine-plaster spraying unit is closed again, the machine switches back to stand-by mode.

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6.4 Spraying with the Spraying Unit

WARNING

Never point the spraying unit at another person!

The machine is still ready for operation if switched to "standby" and can be started remotely and accidentally at any time causing serious injury.

The white lamp on the double "On/Off" button lights up in standby mode.

- Ensure that the compressor is switched on: set selector switch to "1" (fig. 17, 1)
- Ensure that the control cable of the air-pressure monitor is plugged in to the switch cabinet (fig. 18, 1)
- Ensure that the air valve on the spraying unit is closed
- Set main switch to "1"
- Switch machine on at double push button "On/Off"

The machine is now ready for operation, i.e. in stand-by mode. However, it only starts when the air valve on the spraying unit is opened.
When the air valve is closed again, the machine switches back to standby mode.

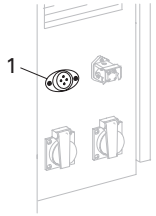

Fig. 18: Connecting the air-pressure monitor of fine-plaster spraying unit.

1 Connection socket for control cable of air-pressure monitor

Button "Water Infeed" (Fig. 3, 6)
The button "Water infeed" is needed to set the correct quantity of water at start-up. As long as it is kept pressed, the solenoid valve also opens when the machine is not switched on with the double push button "On/Off".

Reversing Switch "Motor Forward/Reverse" (Fig. 3, 7)
For normal operation the reversing switch is at "forward". The position "reverse" is required for reducing the pressure in the mortar hoses (for removing blockages or when finishing work).

Fault-Signal Lamp "Frequency Inverter" (Fig. 3, 8)
This red lamp lights up to indicate a fault in the frequency inverter (to correct fault, see section on troubleshooting).

4-Stage Switch "Motor Speed" (Fig. 3, 9)
Using the 4-stage switch "Motor speed", the machine power can be selected in 25% steps up to maximum.

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2.4 Connections on Switch Cabinet

Safety Sockets (Fig. 3, 1)
Supply connection for:
- the compressor provided (230 V), for use with a spraying or fine-plaster spraying unit or
- an optional water pump (230 V) for low mains pressures.

Connection Socket 4-pole (Fig. 3, 2)
The 4-pole connection socket is for:
- connection of control cable of pressure monitor "air" when the pump is in operation or a spraying unit is in use;
- connection of control cable for use with fine-plaster spraying unit.

4-pole Cube Plug (Fig. 3, 3)
Connection for optional vibrator.

Connection for Pressure Monitor "Water" (Fig. 3, 10)
The water-pressure monitor controls the inlet water pressure; it must not be disconnected.

Connection "Solenoid Valve" (Fig. 3, 11)
The solenoid valve opens and closes the internal water feed in the machine; it must not be disconnected.

Supply Cable "Motor" (Fig. 3, 12)
The cable for the motor is plugged in on the motor side. For safety reasons, the plug is secured to the frame by a short chain. The chain is too short to allow the motor to be folded down. If the motor is to be folded down, the plug must first be removed from the motor.

Infeed Socket L6-20 (Fig. 3, 13)
The machine is connected to the site power distributor via the infeed socket.

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- If necessary, adjust the flow quantity (fig. 16, 2) with the fine-adjustment valve.
- When the desired consistency has been reached, release the button "water infeed".

6.3 Mixing and Pumping

When the machine is **not** being used for spraying, observe the following:
- Ensure that the compressor is switched off (fig. 17, 1)
- Ensure that the control cable of the air-pressure monitor is plugged into the switch cabinet (fig. 18)

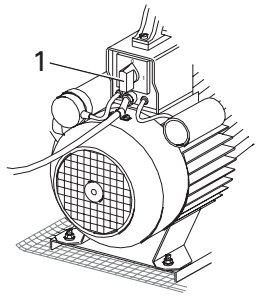

Fig. 17: Switching compressor on/off
1 Compressor "On/Off"-switch

- Switch main switch to "1"
- Switch machine on at the double push button "On/Off"

The machine now mixes and pumps material until it is switched off at the double push button "On/Off".

6.1 Filling the Machine

- Fill the material trough with bagged material through the safety grid

6.2 Adjusting Material Consistency

ATTENTION

Wrong water quantity will result in improper consistency of material.

Mind proper water infeed and do not use material until sufficient consistency has been achieved.

ENVIRONMENTAL HAZARD

Catch any material emerging beforehand in a bucket and dispose of it correctly.

- Open the external water supply
- Set the main switch (fig. 16, 1) to "1"
- Keep button "water infeed" (fig. 16, 4) pressed and read the flow quantity on the flow meter (fig. 16, 3)

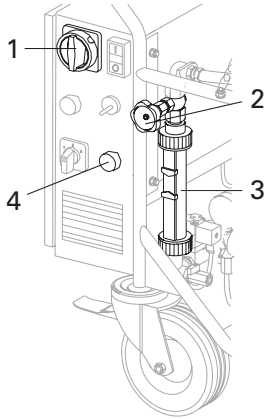

Fig. 16: Adjusting material consistency

1 Main switch
2 Fine adjustment valve
3 Flow meter
4 Button "Water infeed"

2.5 General Technical Data

Dimensions	(with mixer motor and eccentric screw pump)	
	Length	1430 mm (56.3")
	Width	670 mm (26.4")
	Height	1150 mm (45.3")
	Bag-loading height	980 mm (38.6")
Weight	incl. accessories approx.	160 kg (352.74 lb)
of which:	Accessories	15 kg (33.07 lb)
	Mixer unit with material trough incl. eccentric screw pump	75 kg (165.35 lb)
	Small compressor	15 kg (33.07 lb)
	Frame with wheels and fittings	55 kg (121.25 lb)
Noise level	76 dB(A); noise-pressure level at 1 m (3.281 ft) distance (free-field measurement during operation)	

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2.6 Technical Data
Pump Area / Gear Motor

Voltage	230 V
Frequency	60 Hz
Power	3 kW
Nominal speedl	260 r.p.m.
Pump capacity	20 l/min (5.28 gal./min)
Pump pressure	up to 20 bar (290.1 psi)
Pump distance	up to 20 m (65.6 ft)
Pump height	up to 10 m (32.8 ft)
max. grain size	3 mm (0.118")
max. operating pressure	20 bar (290.1 psi)

DANGER

Hoses will explode when exceeding hose pressure.

During operation, the pressure of 20 bars (290.1 psi) must not be exceeded (monitor pressure on hose-pressure gauge).

The pumping quantity and height depend on the material quality and the condition of the rotor and stator used.

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6 Operation

WARNING

Nonobservance of accident-prevention regulations could result in damage to the machine or equipment or even in death or serious injury.

Always comply with the accident-prevention regulations in force and all generally recognized safety regulations.

WARNING

Damage to the machine or parts of it could cause personal injury, electrocution etc.

Before every start-up, inspect the machine carefully for damage to electric cables, plugs, couplings, mortar and air hoses etc.

Any damage must be repaired before starting the machine.

WARNING

Moving parts can crush and cut.

Do not put your hands or place objects into the material trough.

Ensure that the safety grid is mounted securely on the material trough.

ATTENTION

Never use the main switch to switch the machine on and off.

The frequency converter may malfunction when switching the machine off repeatedly using the main switch.

The machine must only be switched on and off at the double push button "On/Off", or using the spraying unit or fine-plaster spraying unit.

5.9 Installing and Connecting Vibrator (optional)

NOTE

When working with materials such as insulants with a high polystyrene content, we recommend using a vibrator (optional).

- Screw the vibrator securely to the mounting surface provided (fig. 15, 1)
- Connect the vibrator cable to the switch cabinet (fig. 15, 2)

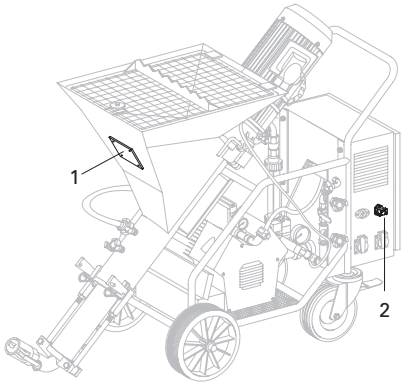

Fig. 15: Installing and connecting vibrator

1 Mounting surface
2 4-pole cube plug for connection of vibrator cable

2.7 Air Supply

The mono-mix fu is fitted with a membrane compressor which supplies the compressed air for the spraying process. A pressure monitoring device monitors the pressure in the air hose. When the pressure generated by the compressor is ≥ 2 bar (29 psi), the machine is switched on from “standby” mode. If the pressure in the hose is greater than 2.5 bar (36.3 psi) (e.g. because spraying unit is closed) the pressure monitoring device switches the machine back to "standby".

WARNING

Never point the spraying unit at another person!

The machine is still ready for operation if switched to "standby" and can be started remotely and accidentally at any time causing serious injury.

The white lamp on the “On/Off” button lights up in standby mode.

Compressor	voltage	230 V
	frequency	60 Hz
	power	1.1 kW
	capacity	250 l/min (66.05 gal. min)
	max. operating pressure	4 bar (58 psi)
Pressure monitor	air starting-up pressure	2.0 bar (29 psi)
	switch-off pressure	2.5 bar (36.3 psi)
Connections	3/8" -hose with GEKA coupling	

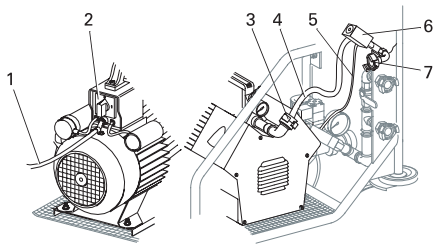

Fig. 4: Compressor and air fitting

1 Compressor power cable
2 Compressor “On/Off” switch
3 GEKA-coupling on compressor for compressed-air hose
4 Compressed-air hose 3/8" x 0.9 with cpl.
5 Control cable of pressure monitor (connection on switch cabinet)
6 Air-pressure monitor
7 GEKA-coupling for air connection of spraying unit

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2.8 Water Supply

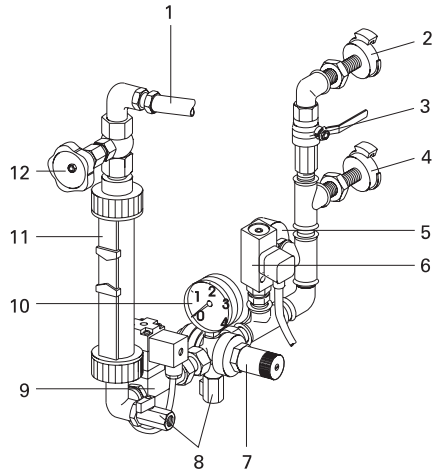
The water inlet pressure is controlled by a pressure-monitoring device. If the pressure drops below 2 bar (29 psi), the machine switches off automatically to prevent it from running dry.
A built in pump (see fig. 10,1) increases water pressure when mains water pressure is too low.
Pump specifications are:

- Voltage 230 V
- Frequency 60 Hz
- Power 0.3 kW
- Capacity 40 l/min (10.57 gal./min)

A pressure reducer keeps the water inlet pressure during operation constant at 2 bar (29 psi) to avoid fluctuations in the consistency of the material.

The required water quantity is adjusted manually by means of a fine adjustment valve. A flow meter with float indicates the flow of water per hour.

Fig. 5: Water fitting



1 Water hose 1/2" x 1.25 m complete
2 Water inlet
3 Ball valve 1/2"
4 Water supply tap
5 Pressure gauge 0 - 10 bar (0 - 145 psi)
6 Pressure monitor 1 - 16 bar (14.5 - 232.1 psi); cut-in pressure 2.5 bar (36.3 psi); cut-off pressure 2.0 bar (29 psi)
7 Pressure reducer 1/2"
8 2 draining valves 1/4" AG / IG
9 Solenoid valve 24 V
10 Pressure gauge 0 - 4 bar (0 - 58 psi)
11 Flow meter 300 - 1100 l/h (79.3 - 290.6 gal./h)
12 Fine adjustment valve 1/2"

5.8 Rotation Direction of Motor

ATTENTION

Wrong rotation direction of motor prevents water supply to mixing pipe.

For operation, the direction of rotation of the motor must be set to "1 = forward".

- The direction of rotation is set with the reversing switch "Motor forwards/reverse".
  Position 1 = forward, position 2 = reverse.

Water is only supplied to the mixing pipe in position "1" (motor forwards). Only then does the solenoid valve open.

The position "2" (reverse) is required for reducing the pressure in the mortar hoses for removing blockages (see page 52 "Removing blockages").

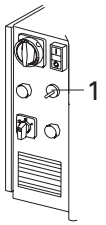


Fig. 14: Rotation direction of motor

1 Reversing switch "Motor forward/reverse"

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5.7 Mains Power Connection

ATTENTION

The frequency inverter may cause the circuit breaker to malfunction.

Before use, the function of the FI circuit breaker must be tested while the machine is running.

Only FI circuit breakers with the symbol shown opposite should be used.
Required fuse: min. 20 A.

Cable and	SJ14/3
Cable plug types:	L6-20A, 3-pole

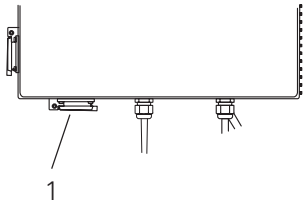

Fig. 13: Input socket, L6-20A,3-pole

1 Input socket

2.9 Accessories

The mono-mix fu is fitted with the following standard accessories:

- 1 Water pump TM61E
- Eccentric screw pump, type mono-star
- Pump end piece with mortar-hose coupling M 35
- Spraying unit with coupling M 25
- Mortar hose NW 25, 10 m (11 yds.) in length, compl. with coupling V 25/M 25
- 1 air hose 1/2", 11 m (12 yds.) in length, with GEKA-coupling on both ends
- 1 reducing adapter V 35/V 25 turning part
- 1 reducing adapter for cleaning M 35/GEKA
- 1 foam-rubber ball Ø 35 mm (1.38")
- 1 open-end wrench 10 x 13
- 2 ring wrench 19 x 24
- 1 turning tool
- 1 cleaning tool with handle
- 1 wrench for sieve pot
- 1 screwdriver, size 7
- 1 mortar nozzle, hole 12 mm (0.47")
- 1 hose-pressure gauge 0–100 bar (0 - 1450.4 psi)
- 1 cleaning tool

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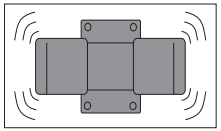
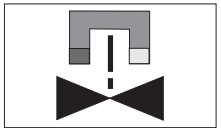
2.10 Symbols on the Machine

Storage for Operating instructions

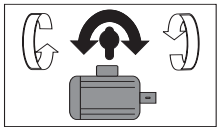


Vibrator connection

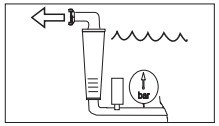
Water-pressure connection



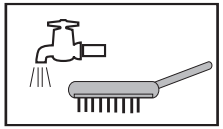
Solenoid-valve gauge



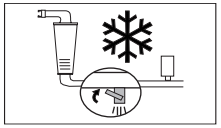
Selector switch Motor rotation direction



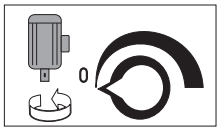
Button water infeed



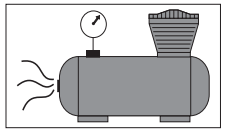
Water supply tap



Drain fitting in cold weather

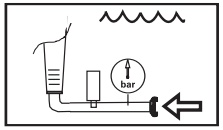


Reversing switch Motor speed

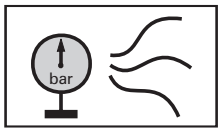


Compressor connection

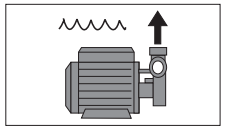
Warning for moving/ rotating parts



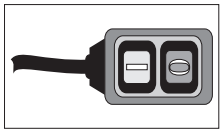
Inlet water fitting



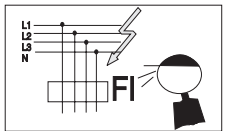
Connection for control cable Air pressure monitor



Connection water pump



Connection for control cable for fine plaster-spraying unit



Connection on machine only to site power-distributor with FI circuit breaker

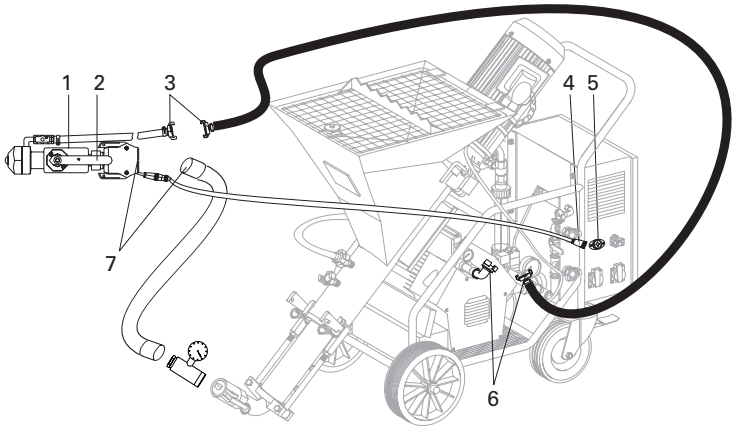


Fig. 12: Connecting the fine-plaster spraying unit

1 Fine-plaster spraying unit
2 Stop valve on fine-plaster spraying unit
3 Connection of compressed-air hose with Geka coupling to the Geka coupling of the fine-plaster spraying unit.
4 Socket of control cable on fine-plaster spraying unit
5 Connection socket for control cable on switch cabinet
6 Connection of compressed-air hose with Geka coupling at both ends to the Geka coupling of the compressor.
7 Connection of mortar hose to fine-plaster spraying unit.

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5.6 Connecting Fine-Plaster Spraying Unit (optional)

WARNING

Never point the spraying unit at another person!

The machine is still ready for operation if switched to "standby" and can be started remotely and accidentally at any time causing serious injury.

The white lamp on the double "On/Off" button lights up in standby mode.

- Connect the compressor power cable to a safety socket in the switch cabinet (L15-3-pole)
- Connect the long compressed-air hose (Geka coupling at both ends) to the Geka coupling of the fine-plaster spraying unit (fig. 12, 3) and to the Geka coupling of the compressor (fig. 12, 6)
- Connect the control cable of the fine-plaster spraying unit (fig. 12, 4) to the switch cabinet (fig. 12, 5)
- Connect the mortar hose to the fine-plaster spraying unit (fig. 12, 7)

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3 Transport / Set-up

3.1 Transporting the Machine

WARNING

To avoid damage to the machine and personal injury, do not lift the machine by crane or other lifting gear.

The machine must be transported manually.

The machine can be dismantled into its various components for this purpose (see section "Dismantling into components", page 58).

3.2 Setting the Machine up

WARNING

Tilting or moving of the machine could cause malfunction or damage to the machine or personal injury.

The machine must be positioned steadily on a level surface.

The machine must be secured and positioned in an area where no objects can fall onto it from above. If this is not possible, the machine and the area around it must be protected by a roof.

The work area at the switch cabinet and the area around the pump unit must be easily accessible.

4 Assembly

4.1 Mounting the Material Trough

- Place the material trough on the mixing pipe
- Secure the material trough with the wedge (fig. 6)

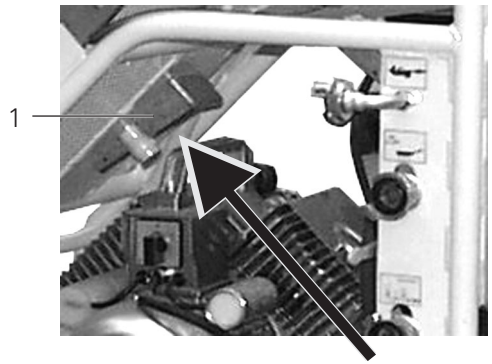

Fig. 6: Wedge fastening of mixing pipe

1 Wedge

5.5 Connecting Spraying Unit (optional)

WARNING

Never point the spraying unit at another person!

The machine is still ready for operation if switched to "standby" and can be started remotely and accidentally at any time causing serious injury.

The white lamp on the double "On/Off" button lights up in standby mode.

- Connect the power cable of the compressor to a safety socket in the switch cabinet (L15-3-pole)
- Connect the short compressed-air host to the compressor (fig. 11, 5) and the pressure-monitoring device on the air fitting (fig. 11, 7)
- Ensure that the control cable (fig. 11, 6) of the air-pressure monitor is plugged in at the switch cabinet (fig. 11, 9)
- Couple the long compressed-air hose (fig. 11, 4 – Geka coupling both sides) to the Geka coupling of the spraying unit (fig. 11, 3) and the GEKA coupling of the air fitting (fig. 11, 8)
- Couple the mortar hose to the spraying unit (fig. 11, 13)

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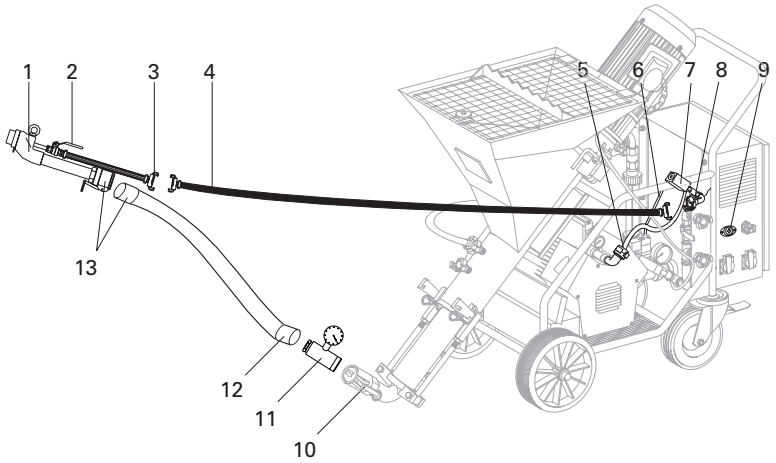

Fig. 11: Connecting spraying unit

1 Spraying unit
2 Air valve on spraying unit
3 Air connection with Geka coupling on spraying unit
4 Compressed-air hose, with Geka coupling at both ends
5 Geka coupling on compressor
6 Control cable of air-pressure monitor
7 Air-pressure monitor
8 Geka coupling on air fitting
9 Socket for control cable on air-pressure monitor
10 Pump end piece
11 Hose-pressure gauge
12 Mortar hose coupling on machine side
13 Connection coupling for mortar hose on spraying unit

4.2 Assembling the Screw Pump

The screw pump consists of a stator with rotor to fit.

- Follow the assembly instructions on the stator (fig. 7, 8)
- Hook a connecting rod (fig. 7, 7) onto one side of the pump mixing pipe (fig. 7, 1)
- Place stator with rotor in position (= eccentric pump) on the pump end piece (fig. 7, 9) without tilting the rotor and stator
- Hook the second connecting rod onto the pump mixing pipe
- Using the clamping wedges (fig. 7, 2), tighten the screw pump including the pump end piece and secure on both sides with cotter pin

If the eccentric pump is not secure enough:

- Release the counter nuts of the connecting rods (fig. 7, 6)
- Tighten the tensioning nuts (fig. 7, 5 – both sides) and re-secure them with the counter nuts

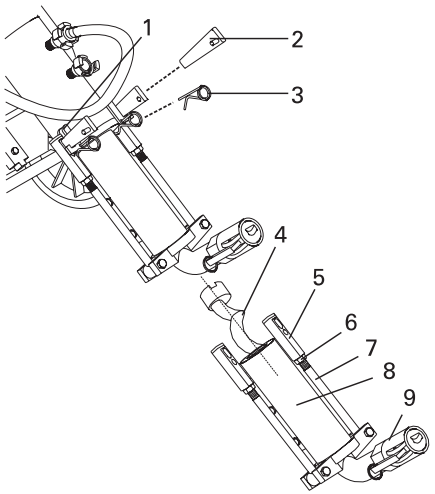

Fig. 7: Assembling screw pump

1 Pump mixing pipe
2 Clamping wedge (both sides)
3 Securing pin (both sides)
4 Rotor
5 Tensioning nut (both sides)
6 Counter nut (both sides)
7 Connecting rod (both sides)
8 Stator
9 Pump end piece

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4.3 Assembling Portioning Screw and Motor

- Insert motor suspension into the holder and secure with bolt; then secure bolt with cotter pin (fig. 8, 6)
- Push portioning screw (fig. 8, 3) into material trough so that lower end (fig. 8, 2) enters the bearing provided
- Fold motor over so that the upper end of the portioning screw enters the bearing (fig. 8, 4)
- Fold motor over entirely and secure with eccentric lock (fig. 8, 1)
- Insert motor plug (fig. 8, 5)

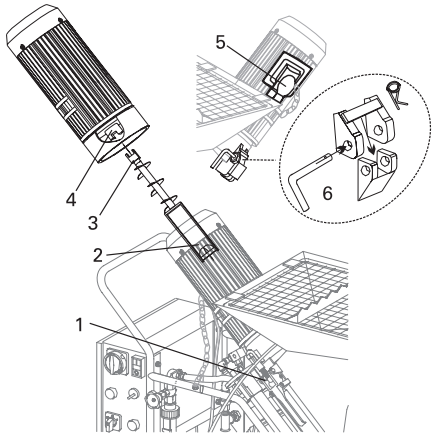

Fig. 8: Assembling portioning screw and motor

1 Eccentric lock
2 Lower end of portioning screw
3 Portioning screw
4 Upper end of portioning screw
5 Motor plug
6 Motor mounting

5.4 Connecting Mortar Hoses

DANGER

Hoses will explode when exceeding hose pressure.

Only mortar hoses with a permitted operating overpressure of 40 bars (580.2 psi) and a bursting pressure of at least 120 bars (1740.5 psi) must be used.

NOTE

We recommend installing a hose-pressure gauge. This allows the pressure in the mortar hoses to be monitored at all times and increases the safety of the operating personnel.

ATTENTION

Do not lay out more mortar hoses than are actually required.

This avoids unnecessary loading of the machine and premature wear to the spiral pump.

- Connect the hose-pressure gauge (fig. 11, 11) to the pump end piece (fig. 11, 10)
- Couple the mortar hoses securely to one another
- Couple the mortar hose securely to the pump end piece

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5.3 Water Supply from Drum

INFORMATION

If water cannot be supplied from a mains pipe, a drum can be used. In this case, a water pump (230 V, optional) is required.

- Place a drum with clean water beside the machine
- Vent the 3/4" water hose
- Insert one end of the hose into the drum (down to the bottom)
- Ensure that the hose remains at the bottom of the drum; if necessary, place a stone on the hose
- Connect the other end of the water hose to the pump
- Water-pump connection, see "Connecting water pump"

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5 Start-up

WARNING

Nonobservance of accident-prevention regulations could result in damage to the machine or equipment or even in death or serious injury.

Always comply with the applicable accident-prevention regulations and all generally recognized safety regulations.

WARNING

Damage to the machine or parts of it could cause personal injury, electrocution etc.

Before every start-up, inspect the machine carefully for damage, in particular to electric cables, plugs, couplings, mortar hose and air hoses.

Any damage must be repaired before starting the machine.

WARNING

Moving parts can crush and cut.

Do not put your hands into the material trough.

Do not place objects in the material trough.

Ensure that the safety grid is mounted securely on the material trough.

Disconnect power before servicing.

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5.1 Connecting to Water Supply

ATTENTION

The machine will malfunction if water pressure is insufficient.

To ensure trouble-free operation, minimum infeed water pressure must be constantly 2 bar (29 psi).

- Ensure that the water-draining valves are closed. (fig. 9, 1).

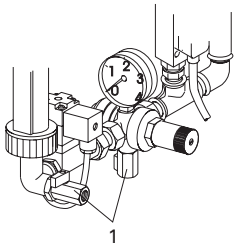


Fig. 9: Water fitting

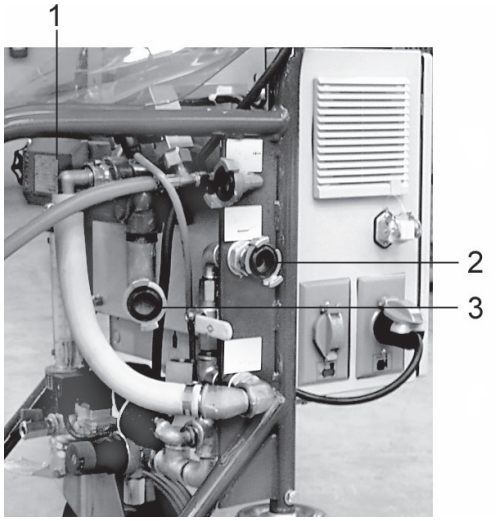
1 Water-draining valves

For the exterior water connection, use a 3/4" hose with a GEKA coupling (not supplied with machine)

- Check that the water hose is free of leaks
- Connect 3/4" water hose with GEKA coupling to the water inlet (fig. 10, 1) of the water fitting

Make the interior connection between the flow meter (fig. 10, 3) and mixer pipe with the 1/2" water hose with GEKA coupling (1.25 m (49.2")):

- For cement plasters, use the upper GEKA coupling (fig. 10, 4)
- For gypsum plasters, use the lower GEKA coupling (fig. 10, 5)
- Close the connection not in use with the blind flange



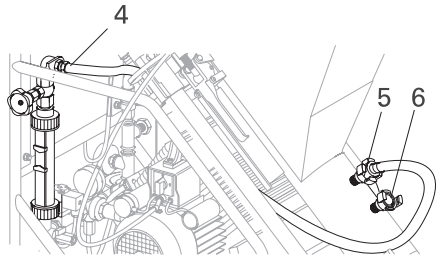


Fig. 10: Water connection

1 Water pump
2 Water inlet in the machine
3 Water outlet (e.g. for cleaning)
4 GEKA coupling on flow meter
5 Water connection for lime gypsum plasters
6 Water connection for gypsum plasters

5.2 Connecting the Water Pump

In order to adjuste a too low water pressure in the inlet, a water pump is built in. Water pressure may not be lower than 2 bar (29 psi).

- Connect water pump and water inlet (fig. 10, 2) with 3/4" water hose and GEKA coupling
- Connect power cable of water pump to a safety socket in the switch cabinet

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